

# A Conversation with Janet L. Norwood

Stephen E. Fienberg

**Abstract.** Janet L. Norwood was born in Newark, New Jersey, on December 11, 1923. She was an undergraduate at Douglass College of Rutgers University from 1941 to 1945 and went on to do graduate studies in economics at Tufts University, from which she received the M.A. (1946) and Ph.D. (1949) degrees. She taught briefly at Wellesley College in 1948 and 1949. Several years later, in 1963, she joined the Bureau of Labor Statistics (BLS) and remained a member of its staff for 28 years. From 1979 to 1991 she headed the agency as Commissioner of Labor Statistics, serving under both Democratic and Republican presidents. On her retirement from BLS in 1991, a U.S. senator characterized her as a “national treasure.” She is now a Senior Fellow at the Urban Institute in Washington.

Her contributions to BLS and to the federal government more broadly have been widely recognized by the government, by professional societies and by universities. For example, in 1979 she received the Philip Arnow award, the highest award given by the Department of Labor, the Julius Shishkin Award from the Washington Statistical Society in 1986 and was chosen as the 1990 Statistician of the Year by the Chicago Chapter of the American Statistical Association. Norwood has also received honorary degrees from Carnegie Mellon University and Florida International University.

Norwood was President of the American Statistical Association in 1989 and has served as a member of the board of directors of several professional associations. She was chair of the Board of Trustees of the National Institute of Statistical Sciences in 1992 and 1993, and she is a member of the Committee on National Statistics at the National Research Council and of the Editorial Advisory Board of *Chance*.

The following conversation took place on the deck of her summer home in Liberty, Maine, in 1993.

**Fienberg:** Let's begin with some recent events, and then we can move back to the Bureau of Labor Statistics (BLS). It has been a year and a half since you stepped down from the position of commissioner of labor statistics. I assume that that hasn't been idle time and that you've taken up new activities.

**Norwood:** Yes, I certainly have. In fact, I'm busier than ever before, and the scope of my activities is broader. Of course, I continue my interest in the employment situation and keep up with the problems of the labor market, but I do a number of other things as well. The president asked me to chair the new Advisory Compensation, which is made up of 11

members appointed by the House of Representatives, the Senate and the president. The Council has three years to review the entire unemployment insurance system and make recommendations for its improvement. The program has not changed very much since its inception 50 years ago, even though the labor market has changed enormously during that period. Unemployment insurance involves a number of important issues of public policy, but it is important also to the federal statistical system. Unemployment insurance tax records provide the BLS with the universe of business establishments for its business survey sample, and the system also produces information on wage income for the national accounts.

**Fienberg:** You said you were appointed by the president; which president?

**Norwood:** That's an interesting issue. I was appointed by President Bush just before he left office; the Clinton administration asked me to stay on, and I have agreed to do so. The Council has given me

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FIG. 1. Janet L. Norwood at her desk at the Bureau of Labor Statistics about 1989.

an opportunity to work with many of my old friends at BLS and in the Department of Labor. I have also talked with Secretary of Labor Robert Reich about unemployment insurance—and, of course, on each of these occasions, I have made sure to remind him about the importance of his support for the independence of the Bureau of Labor Statistics and its need for adequate budget authority to maintain the quality of its indicators.

### REORGANIZING THE FEDERAL STATISTICAL SYSTEM

**Fienberg:** Now I recall, just before your retirement as Commissioner of Labor Statistics, that you described to me a substantial writing project that you had in mind on federal statistics. Have you been able to find some time to work on that?

**Norwood:** Yes, but not as much as I would like. I'm spending a day or two a week at the Urban Institute on that. I believe very strongly that we need to strengthen the federal statistics system—to make it work more efficiently and to coordinate it more effec-

tively. We have evidence of increasing fragmentation every day. We created a new Bureau of Transportation Statistics. Congress discusses from time to time the need for a new agency for environmental statistics. There are important benefits in having a decentralized system which locates statistical agencies in program departments, but if we want those benefits, then we must invest in coordination. We have lost a great deal of ground over the last two decades as we have steadily weakened coordination of the system and refused to provide the agencies with resources needed to incorporate new concepts and statistical knowledge. These are not new issues. More than a dozen studies of the statistical system, some over 100 years old, considered these problems. They all came to the same conclusion: we must either strengthen coordination of our decentralized system or we must build an entirely new centralized one. Most of the studies opted for continuation of decentralization but with much stronger coordination.

You know, Steve, there are a number of other problems in the federal statistical system as well. Most people focus on budget retrenchment, and certainly that has been a problem. You cannot have high-quality indicators without the resources to produce them and to keep them up to the state of the art. In part that was because the whole federal budget was reduced and statistics had to take its fair share. When those cuts came, we saw how hard it was to cut out programs. It is much easier to cut around the edges—to reduce sample size or eliminate research to improve statistical techniques. That makes everything a little bit worse, but nobody knows the difference because the data continue to be published regularly. In the early Reagan years, when we were faced with reduced budget authority at BLS, I decided to cut out whole programs. It was very difficult to do. No one was happy. But the more I thought about it, I became convinced that the federal statistical system needs to rethink how it goes about its entire budget process.

I also want to look at how other statistical systems operate, especially the Canadian and the British. The Canadian system is far more centralized than ours, and the system in the United Kingdom, although decentralized, has a much stronger coordinating authority than we do.

**Fienberg:** Now, my recollection of recent discussions in the *Journal of the Royal Statistical Society* is that all the statisticians in the United Kingdom complain about the treatment of statistics within the government and they have pushed, first through a working party and then through other groups, for reorganization and strengthening.

**Norwood:** That's true; and in fact some reorganization has taken place. The problem was that dur-

ing the Thatcher period a number of changes were made, some of which led to the belief that the data were being politicized. We never had any real proof of that, but there was a perception of political interference. In addition, the U.K. government established a commission which essentially said that data must be produced for use by the government and that public funds should generally not be used to produce data needed by those outside the government.

**Fienberg:** That was the Rainer commission?

**Norwood:** Yes. The result of all of that discussion was that changes were made to the U.K. system. It still remains decentralized, but the coordinating authority was strengthened, even though at the time coordination in the U.K. was stronger than that in the United States. One important difference between the U.K. system and our own, however, is that the U.K. has a career statistical service directed by the head of the coordinating authority. He has authority to move statisticians from one agency to another.

But the point is that our federal statistical system must change. We face a world in which many aspects of our lives depend on government statistics. We allocate payments to states and local governments on the basis of data produced by the federal government. We escalate social security and other pensions by government price indexes. We even use data to trigger government programs on and to turn them off. Indeed, you might say that we live in a world that, in many ways, is run by the numbers. It is essential that we make more intelligent decisions in the future than we have in the past, and to do that we need to make the federal statistical system more efficient. It should be the best in the world. Why should we insist, for example, that the Secretary of Labor make budget decisions by judging whether the Current Population Survey (CPS) redesign or a Consumer Price Index (CPI) revision is more important than job training, the Job Corps or inspectors for occupational safety and health while, at the same time, the Secretary of Commerce must look at the trade-off between redesign of the Survey of Income and Program Participation and more funding for international trade development? The same thing is true in agriculture and in education. The trade-off ought to be among the statistical surveys themselves. That is not done, now.

Another point that concerns me is that the trade-offs for the budget are often made in the number of outputs rather than in the quality of products. And the quality of the product frequently depends upon research. Research was cut back drastically during the first Reagan period. In fact, one year I went through the Bureau of Labor Statistics budget and eliminated the word "research" wherever I found

it. I substituted "evaluation" for research, because I knew that evaluation was considered a "good" because it might lead to budget reduction, whereas research was considered a "bad" because it cost money and might not get anywhere. The result has been that the federal statistical system has been forced to borrow on the future. Existing products have been maintained, but new initiatives for the future have been delayed.

I hope that I can help the system. I know it well and would like to see some constructive change. I think that's worth some of my time.

**Fienberg:** Now the last commission in that long list of studies of the federal statistical system that you described I guess was the Bonnen commission, led by Jim Bonnen from Michigan State University?

**Norwood:** Yes, that's right.

**Fienberg:** It reported right at the end of the Carter administration and nothing was done to follow up on its recommendations. Is there some prospect that something will be done?

**Norwood:** Well, I hope so. I am not interested merely in writing about this; I want to get my ideas put in place. And I think I am having some success. I have spent a lot of time exploring issues and solutions with those in the statistical system. Unless the senior staff of the federal statistical system buy into whatever is to be done, it won't happen. I've also spent time with the relevant committees of the Congress because Congress can legislate change. Unfortunately, a large number of committees would need to be involved. I also worked with people in the Bush administration and, as soon as the Clinton people came on board, I was in touch with many of them. I hope that the Clinton administration will use at least some of the ideas that I have been developing as part of its program for improving government efficiency. I believe that it is important that we act to improve the system, and I think there is a chance for some success, especially if it can be done early in an administration and not at the end.

**Fienberg:** A little while back when you were describing the system in the United Kingdom, you talked about independence, the independence of the agency; how do you create independence in a decentralized system? How can the leaders of statistical agencies act in the way that you just described?

**Norwood:** The first thing that you need is confident, professional heads for the statistical agencies, who have the courage to stand up for what they think is right. In my experience as BLS commissioner, I found that it was important to make clear that you were willing to resign on principle if the issue were important enough. People sometimes like the perks of the job too much to keep that in mind. Statistical agencies must be objective and independent of



FIG. 2. Janet Norwood at age 5.

politics, and I believe that agency heads must assert independence. I have learned that, in government, you have the independence that you assert and insist upon. For example, when I first became Commissioner of Labor Statistics, it was customary for a representative of the policy arm of the Department of Labor to sit in on the reviews of the major BLS press releases. One of the very first things I did as Commissioner was to inform him that he would no longer be welcome—and I got away with it! The leader of a government statistical agency has to walk a very fine line between being helpful by providing factual analyses for those developing government policy on the one hand and staying completely out of policy formulation on the other. It's very difficult to do. One can develop procedures that will help to keep independence. But even more important is that an agency head needs to foster a culture of objectivity and independence for the entire staff. I believe we've done that at the Bureau of Labor Statistics. The entire staff understands fully why it is so important to retain this independence.

Independence in government is not easy to accomplish. For example, how do you handle situations in which you have to correct the President of the United States? We did that. There were times when we had to say that the President was wrong, but we tried always to be objective and careful about it. I remember when Ronald Reagan at a high school in Chicago told students that the Bureau of Labor Statistics did strange things with numbers—when it didn't like the numbers, it changed them. The President was talking about seasonal adjustment. This was a period in

which the unemployment rate, after seasonal adjustment, was higher than the month before, although before seasonal adjustment it was not. I spent a lot of time on the telephone with reporters that day. I had to explain what the President "probably meant," why data are seasonally adjusted and how the adjustment was made. I explained all that to reporters. Then I said that I was sure that the President would agree that when several million young people leave school in the summer months each year and unemployment goes up as they search for jobs, it would be misleading to suggest that a recession had begun. And so, we seasonally adjust data to take account of those events which recur each year. Because the President, and other users of the data, needed to know the general state of the employment situation, we published the seasonally adjusted data. And because they also needed to be aware that millions of students were looking for jobs, BLS published the data before seasonal adjustment as well as after seasonal adjustment.

**Fienberg:** And most of your examples, not surprisingly, come from the Bureau of Labor Statistics.

**Norwood:** Yes. I spent a lot of time there.

#### COLLEGE IN WARTIME

**Fienberg:** Let's go back for a few moments to your



FIG. 3. Graduation from Douglass College of Rutgers University in 1945.

years at college. Weren't you a student during the World War II years? What was that like?

**Norwood:** Yes. The Japanese bombed Pearl Harbor in December of my freshman year, and the war continued through my first year in graduate school. We students were intensely interested in following the events of the war but, more important, became active in discussion of the issues to be dealt with once the war was won. As president of the college's Social Science Club, I arranged a series of meetings and lectures on international cooperation to keep the peace and on domestic economic and political policy issues relating to the war effort. I was active as well in national student organizations dealing with these issues and was elected to represent the Middle Atlantic states at a number of their conferences.

The war also directly affected my personal life. Bernard and I were married at the end of my sophomore year in college, shortly after he entered the army. For some months after that (before joining the infantry forces in Europe), he was assigned to an Army Specialized Training Program in New York City. In those days, Douglass College had curfew and other restrictions to protect women students from straying from the fold. Since I was the first married woman to live on campus, the Dean of Women and I had many conferences on how the rules should be applied to me. Should my husband be permitted to visit me in my room? Should my parent's permission be required for me to go to New York City to visit my husband?

**Fienberg:** It sounds like this was only the first of many pioneering activities for you as a woman.

**Norwood:** Yes, this was the beginning of a series of actions break new ground as a woman. I

was the youngest to receive a Ph.D. at the Fletcher School of Law and Diplomacy at Tufts University, the first woman to be appointed Commissioner of Labor Statistics, the highest ranking woman in the Department of Labor and, from time to time, I have been the first woman elected to high office in organizations in which I have been active.

## FAMILY

**Fienberg:** Tell me about your family. I've met one of your sons; you have another?

**Norwood:** Yes, I have two sons. The older of the two, Stephen, is Associate Professor of History at the University of Oklahoma. He and his wife are social historians and have been helping my husband and me to continue our education by stressing the importance of longitudinal analysis. Stephen's book, *Labor's Flaming Youth*, won the Herbert Gutman prize from the University of Illinois Press for the best book in social history in 1990.

My younger son, Peter, is an electrical engineer in the computer industry. It has been a great boon to us to have an advisor in the family to help us when we get stuck with computer software and hardware problems. Peter has been responsible for software product development and is now with an up-and-coming computer company in Austin, Texas, where he is responsible for new product innovation. I have especially enjoyed the opportunity to discuss with Peter issues relating to the management of technical operations.

Peter has two daughters: Aliza, 11, and Ilana, 7. We visit them often in Texas and look forward each year to having them visit us in the summer in Maine. We are very enthusiastic grandparents who receive great satisfaction from our contacts with these stimulating children.

**Fienberg:** You must have been very young when you married. How did Bernard's career develop?

**Norwood:** Yes, we were very young; I was 19 and he was 20 when we married. And, of course, neither of us had yet received much university education. When I first met Bernard on a blind date, he was working as a machinist, having left college to earn enough money to return. Both of our families suffered a suppressed consternation over whether Bernard would ever finish college and whether I would remain the full four years at Douglass.

But we never wavered from our goals. We both have Ph.D.'s in economics and have provided counsel and support to each other throughout our professional careers.

Bernard started out as an international economist working on trade and commercial policy issues at the Department of State. He joined the U.S. Mis-

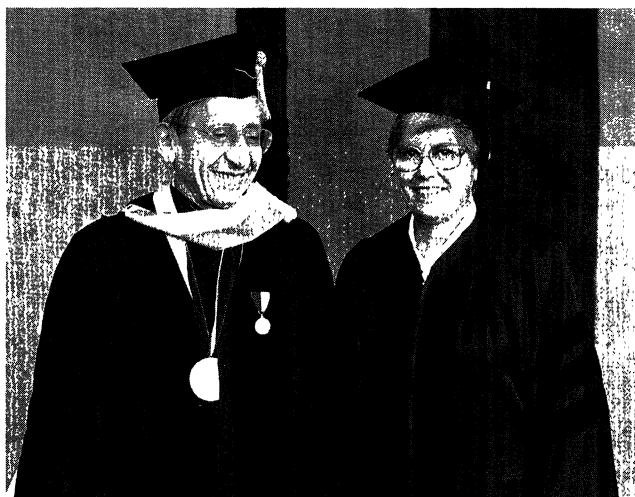


FIG. 4. Janet Norwood receiving her honorary degree from Carnegie Mellon University's President Richard Cyert.

sion to the European Communities in Luxembourg and Brussels, arriving in 1958 just as the Common Market began. We all had a wonderful opportunity to spend five years in Europe at a time of excitement at the creation of new institutions. Shortly after our return to Washington in 1963, Bernard served at the White House under Governor Herter to develop and coordinate interagency policy for the Kennedy Round of negotiations under the General Agreement on Tariffs and Trade. Upon completion of the Kennedy Round, after a year at the National War College, he became an advisor at the Federal Reserve Board. Some seven years later, he left the government to join an economic consulting firm in the private sector.

It was on our return from Europe that I began my own career in the federal government and the Bureau of Labor Statistics.

**Fienberg:** When we first met, it was, as I recall, 1977, and I was doing work in connection with the National Commission on Employment and Unemployment. The position you were in, at the time, was Deputy Commissioner of Labor Statistics. That wasn't your first job at BLS, was it?

**Norwood:** No, it was not. I worked at the Bureau in a number of different positions, ultimately working up to Commissioner. I enjoyed my work at BLS. The Bureau is a great place to work, and the people I worked with were wonderful people. The issues there were very challenging.

### FIRST JOB AT A FEDERAL STATISTICAL AGENCY

**Fienberg:** When did you actually begin work at BLS?

**Norwood:** At that time—1963—my younger son was still in primary school, and I did not want full-time work. In those days, it was difficult for a professional to work part time, but BLS, even then, had flexible, modern employment policies. I arranged to work three full days and two half-days. That way, I could be home at least twice a week when Peter finished school; and it was good for me. You know, when you work part time you have to be well organized; there are still deadlines to meet. And, in most instances, I produced as much as those who were full-time workers.

I came to BLS as a junior economist. I worked originally in the international areas, doing studies on labor issues in Burma, Cambodia and other developing countries. I soon moved on to write the United States portion of the first comparative study we did with Japan. At the time, I knew very little about the U.S. wage structure and about wage statistics in general, but I learned pretty fast. The only thing that bothered me about that whole experience was that our study group never did meet in Japan. We met in

the BLS office in Washington because there was not enough money for us to go to Japan.

**Fienberg:** The wage data you worked with came from BLS surveys?

**Norwood:** Yes, the Bureau of Labor Statistics had and still has a number of broad program areas: employment and unemployment; prices and living conditions, productivity and technology; employment projections; and compensation and working conditions. Wages are difficult to survey because they are hard to define. And, as in all statistical surveys, the same set of data are used by different people for different purposes. Definitions and concepts for one set of users may not be relevant for others. That, by the way, is one of the problems in applying the principles of quality management in statistical agencies. The agency must develop data useful for the customer, but frequently there are multiple customers, each with a different need.

**Fienberg:** That could easily lead to a very expensive data source. Will an individual customer be able to afford such statistical services?

**Norwood:** Probably not. But in our case, especially in the wage area and in the price area, we had multiple customers; for example, the policy-making arm of the U.S. government and the Social Security Administration both used the Consumer Price Index, but for different purposes. And companies and workers frequently had different views on the underlying concepts of price measurement. In the case of social security payments, you would probably develop two different indexes: one to track inflation in the economy and for general policy-making purposes and one to index social security benefits. But that is not possible, so you make compromises. That's what we have to do in the statistical system.

**Fienberg:** Your first major administrative position at the Bureau was in which of the areas?

**Norwood:** It was in the price area. I began the development of the program to measure import and export prices. And then I moved on, in about 1970, to become Chief of the Consumer Price Index Division. It scared me a bit, because I felt, at the time, that I didn't have the kind of technical background that the chief of a division like that needed.

**Fienberg:** You didn't study price indexes as a graduate student?

**Norwood:** No, I certainly did not. I had not read a book on index making in my life before 1970, but I can tell you I've read a lot of them since! What I decided then was that I needed to replenish and update my education. So, since I thought it would be nicer to have company in that venture, I convinced my husband, Bernie, who as I mentioned earlier was also a Ph.D. economist, that it would be useful for him to do the same thing. Over several years, we took courses



in statistics and econometrics so that I got the background that I thought I needed. I had good staff, and I didn't have to get into the development of all of the solutions, but I certainly had to know enough to identify the problem areas and to make technical judgments. You know, one of the things about the Bureau of Labor Statistics that is different from some of the other agencies is that the Commissioner is very much involved in the development of the data themselves. In some other agencies, that role is delegated to the deputy, but that's not the case at the Bureau of Labor Statistics.

**Fienberg:** Now, when you began to work on the Consumer Price Index, wasn't it a very different survey than it is today?

**Norwood:** It certainly was. Let me tell you that I have felt all of my professional life that if you understand the statistical problems involved in the development of the Consumer Price Index you can handle almost any government survey problem. When I became chief of the CPI Division, we had used probability sampling in the selection of the sample of areas for price collection, in the design of the BLS Consumer Expenditure Survey, which formed the basis for the weights and sample of items, and in the selection of the items for the CPI market basket that were priced for the index. But objective sampling stopped there because no one could figure out how to go beyond. There seemed at the time to be no practical way to join a probability selection of retail stores and outlets with a probability selection of the market basket items, especially since the same variety of the item had to be priced each month.

The problem was that the stores in the probability sample frequently did not stock the item that fell into the probability sample of items. The store (in CPI parlance, the outlet) selected might sell stoves but not refrigerators, or frozen fish but not fresh fish. And, if the sample of outlets was selected independently of the sample of items, the data collector would often be forced to report that the item sampled for pricing could not be found in the store sampled for the collection.

The problem was further complicated by the need to develop a detailed description of the item so that the same variety of the item could be priced each month. Another problem was that no complete universe of the stores was available that could be related to the expenditures consumers made. We had no way of knowing whether people shopped in the mom-and-pop store on the corner or at the discount store at the shopping mall.

**Fienberg:** In effect, you got the means but not the variances. Is that correct?

**Norwood:** Originally, when we had only a part of a probability sampling structure we didn't have a

theoretical basis for computing variances. The way BLS coped with this was to try to build in a replication design that permitted the bureau to get at variances in an empirical fashion. With the extension of probability sampling in the 1987 revision of the CPI, we provided for a more extensive system of calculation of variances, and they are published now. But I still puzzle over what those variances mean. The CPI, after all, is made up of a whole series of samples—pricing areas, expenditures, items, retail stores, prices—each of which has a different error structure [see Fig. 6]. And you put them all together in a replication process and calculate variances. But what does that variance mean in statistical terms? It's a fascinating issue.

**Fienberg:** Isn't the meaning even more complex because the index weights come from an expenditure survey done usually many years before?

**Norwood:** Yes, because it takes some years to complete a major revision of such an important program. At the time that I took over the CPI Division, the big controversy was over how the expenditure survey should be done. The Bureau of Labor Statistics had done a housing survey and then used it as the universe for selection of the households for the Consumer Expenditure Survey (CEX). The CEX had been done all at one time, that is, the interviewer reviewed all expenditures for the entire year with the respondent at one time. Sometimes the process took a day or two days of interview with each respondent. It turned out that Julius Shishkin, who was then the head of the Statistical Policy Division of the Office of Management and Budget, had himself fallen into the expenditure survey sample. He had found the burden so onerous that he determined that he would not permit the survey to be done that way again.

**Fienberg:** And he actually had an opportunity to influence this a few years later, didn't he?

**Norwood:** Yes, he did. That decision was made while he was in charge of statistical policy at OMB. There were two major substantive issues at the time: whether the survey should be done on a quarterly basis or an annual basis and how to get the universe for the survey sample selection. And that involved the bureaucratic issue of whether the data collection should be done by the Bureau of Labor Statistics or by the Bureau of the Census. Joel Popkin, who was then the Assistant Commissioner for Prices and Living Conditions, and I, as the Chief of the CPI Division, believed that the survey would be vastly improved if income could be used as a stratifying variable. However, that meant that the population census had to be used as the sampling frame. And so, we pushed for the survey to be done by the Census Bureau. That was a very traumatic period for the Bureau of Labor Statistics, and Geoffrey Moore, then Commissioner



FIG. 5. As member of U.S. delegation to the Inter American Conference of Labor Ministers in Lima, Peru (December 1978).

of Labor Statistics, made the decision to have the Census Bureau do the survey. Census was determined to do a very good job of it, and they did. Unfortunately, however, as often happens in large survey operations, the survey costs went up. The changes were understandable and were not out of line for the survey itself, but I have often wondered whether the right budget trade-off was made. The expenditure survey provided the weights for the index and the items, but prices, even for the same item, differ considerably from one store to another, depending on its location, the income of its customers and the extent of the mark-up. I believed at the time that a greater proportion of the resources should have gone into training of the people who went out to the stores to collect prices and into the sampling of stores and the pricing itself. It takes a very big change in weights to move the CPI. Thus the questions of cost and benefit and of statistical efficiency when two agencies with different perspectives are involved become very much more difficult.

**Fienberg:** When did you become Deputy Commissioner of BLS?

**Norwood:** In 1973 I moved up from being chief of the CPI Division to Deputy Commissioner; actually, I was Associate Deputy Commissioner for Data Analysis. At the time, Dan Rathbun, who had been Executive Director of the Wallis commission, was the Deputy Commissioner.

**Fienberg:** By the Wallis Commission you mean the President's Commission Statistics?

**Norwood:** Yes, the commission which Allen Wallis chaired. A few months later, not very long thereafter, Rathbun left BLS, and I became Acting Deputy Commissioner for Data Analysis. Later, I moved up to full Deputy status.

**Fienberg:** And what did that entail? That sounds like a serious statistical job.

**Norwood:** It was. It involved line authority over all the programs and output of the Bureau of Labor Statistics. That meant prices, wages, employment and all the rest. I saw then how important it was to build up the statistical infrastructure for those programs. One of the greatest strengths at BLS is that it is an interdisciplinary agency. But in my experience with the CPI during the early 1970's, I found that insufficient attention was paid to the views of the statisticians by the economists. I felt that in my days as Deputy Commissioner as well. And later, when I became commissioner, I decided that it was very important to improve the role of the statisticians in BLS. They did not at the time have as much influence as I thought they should have, and one of the first things I did was to insist that BLS build a methods group for the Current Population Survey. As you know, the CPS is done by the Census Bureau for the Bureau of Labor Statistics. Most of the cost of the CPS is funded by the Bureau of Labor Statistics, and BLS publishes the information and analyses of those data. I felt strongly that we needed to have a Statistical Methodology Division in BLS to interact with the Statistical Methodology Division at the Census



Bureau. In the past, all issues of methodology had been left to Census, and BLS had only concerned itself with the development of analyses. My feeling was that we needed to get the talent of both agencies working on such an important survey. I wanted to be sure that we used state-of-the-art survey techniques. I think that the CPS has benefitted from that over the years. In the case of the CPI, when I was chief of the CPI division, I saw the need for strengthening the statistical underpinnings of the index. We were then engaged in the revision of the CPI which took place through much of the 1970's.

### PROBABILITY SAMPLING IN THE CPI

**Fienberg:** What in current dollar terms is the annual budget for the CPI?

**Norwood:** I don't know exactly, but it's probably upward of \$25 million. The CPI is a large monthly survey in which prices are collected by several hundred BLS data collectors. The revision completed in 1978, for which I carried a great deal of the responsibility, is often called the statistical revision of the CPI. Probability sampling was introduced throughout the entire index; this was the first time in the world that the entire sampling process for all parts of a CPI was done with probability techniques. The revision included, for example, a new sample of areas for pricing, a new market basket of items and the development of new expenditure weights. There were also issues about averaging—prices, households or expenditures and alternative approaches to developing the expenditure weights—and about how to reflect the underlying concepts so that the index would have a framework consistent with consumer behavior theory and oriented toward cost-of-living

theory. [For a current description of the CPI methodology see the *BLS Handbook of Methods* Vol. II, U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 2134-2, December 1992.]

The most innovative operational work, however, was the use of probability sampling for outlets to be priced and the sampling of the particular items selected for pricing in each outlet. As I said before, that had always been the stumbling block to the use of probability sampling: how to connect a probability sample of outlets with a probability sample of items and the detailed specification of each item. In the past, only volume sellers had been priced. But we wanted every item sold in the stores to have a chance of selection proportional to the sales of that item, and we had to be certain that a specific variety of the item selected for the sample was actually sold in the store for which it had been selected. With the help of people like Morris Hansen, Joe Waksberg and Ben Tepping, who served as consultants to us in that revision, we found a way to do that.

Let me explain with a relatively simple example: milk. Suppose that milk was an item drawn from the Consumer Expenditure Survey. Well, you can't send an agent out with instructions to collect the price of "milk" and still measure price change because you might get a different kind of milk priced each month. Different types of milk have different prices, and the price comparison from one month to the next must be for the same kind of milk. Thus, the data collector needs to know whether to price chocolate milk or skim milk or vitamin D milk and whether to price it in half-gallon containers or in quarts. And once selected, the pricing agent must be able to find that particular item on the shelf of the particular store selected for the sample.

The CPI is made up of a complex set of interlocking samples:

1. The sample of metropolitan areas in which prices are to be collected is selected from the decennial census.
2. The sample of market basket items is selected from a sample survey of consumer expenditures (CE). The CE consists of two sample surveys: a quarterly survey representing all consumer expenditures and two one-week diaries kept by each consumer unit in a separate sample selected for the diary survey. The diary is needed to get more accurate expenditures on frequently forgotten small items like toothpaste and photographic film.
3. The sample of retail outlets (stores, gas stations, physician's offices, etc.) in which prices are collected. The retail outlets are selected primarily from another sample survey called the Point of Purchase Survey (CPOPS). This survey is used to develop the list of outlet names and addresses.
4. A detailed description, called a specification, must be developed for each market basket item so that the same item can be priced each month. In this case, the data collector, using probabilities related to sales information from the particular outlet selects the detailed variety of the item for pricing. If, for example, the item were bed sheets and the store in the sample sold muslin sheets, dacron and cotton sheets and percale sheets for various sizes of beds all at different prices, the probability selection made on the spot by the data collector when the item was initiated might end up as cotton and dacron double bed sheets in one outlet, whereas the selection in another outlet might be percale twin bed sheets.
5. A sample of housing units for rent collection.

FIG. 6. The sample structure of the Current Population Survey.

**Fienberg:** Milk sounds like a good example of the complexity of the enterprise.

**Norwood:** It's complex enough, but it is one that is easy to explain!

**Fienberg:** Well, what about something more complicated?

**Norwood:** Well, let me first say that, after the 1978 revision, every kind of every variety of any item in the market basket that was for sale in every store in the outlet sample had an opportunity to fall into the sample for pricing. No other country in the world had done that before. It took the ingenuity of a Morris Hansen to figure out how to do it.

Of course, issues of this kind become much more complicated when you get into things like appliances and automobiles and computers. Clothing can be especially difficult, particularly because of seasonal items. For example, you can't price winter coats in Miami or in Hawaii, and you can't price Hawaiian-type shirts in New York City very well either. What we did, with Morris Hansen's help, was to develop a system which permitted us to have a probability selection of the retail outlets and then go into each outlet and have our data collector make a probability selection of each of the items that were priced for the index. Thus every item variety sold in the store had a chance of selection, and the selections of particular varieties in each store could be quite different. That was a massive breakthrough in methodology. It also changed the role of the BLS data collector, because it was necessary to collect the sales data and then to select the actual sample to be priced in each store. I believe that the approach we took makes the U.S. Consumer Price Index probably the best in the world methodologically. As is usually the case, however, we had a few problems with users. Because the sample selection was store specific, the CPI was based on a much wider variety of the items priced, but that meant that we had fewer observations of some. So, several subindexes had to be eliminated.

**Fienberg:** Why were the subindexes eliminated? Because of poor accuracy?

**Norwood:** Not exactly. Some subindexes had to be eliminated because the use of probability sampling meant that every item in the market basket for sale in the outlet had a chance of being selected. And since PPS [probability proportionate to size] was used in each outlet by the data collector, each outlet might end up with a different variety. Thus, we used to have an index for round steak with bone in and an index for boneless round steak, but the number of quotes for each was reduced by the spreading of different varieties among different outlets. Data collectors did not initiate exactly the same specification in each store; it all depended on what was for sale in that store and what the sales figures showed.

You could say that that meant that the subindexes were less accurate because they had fewer quotes.

## THE CURRENT POPULATION SURVEY

**Fienberg:** The other survey you mentioned several times was the Current Population Survey. When we first met in 1977, the National Commission on Employment and Unemployment was examining how BLS did its work in this area, and it had a number of recommendations. It took a long time for the Bureau to respond to some of those. What was the problem?

**Norwood:** That's true. In fact, the Bureau was not able to respond to a lot of the commission's recommendations because each of them cost money. They came at the end of the Carter administration, and the recommendations were considered again at the beginning of the Reagan administration. There were two responses: one from Secretary Ray Marshall in the Carter administration, and one by Secretary Ray Donovan after Reagan was elected. I remember having to go through the Commissioner's report to defer implementation of every item in it that cost money. Because we couldn't get the money for testing, we had to defer most of it.

But you know, the CPS is a fascinating example of one of the most important surveys in the federal statistical system, carried out cooperatively by two agencies using the best trained statisticians in both agencies. It's a good example of effective cooperation between the two agencies. We should recognize, however, that the CPS had changed very little until the redesign that was completed at the beginning of 1994. It is a survey of households, but the survey actually uses the person who comes to the door to report on all the people in the household. There have been a number of people, including our friend Judy Tanur, who have done research on the accuracy of response from those who provide information for others in the household.

**Fienberg:** People who are essentially proxy respondents?

**Norwood:** Yes. The redesign made a number of improvements, but it did not change proxy responses, mainly because the cost would have been too high. The redesign, begun in 1987 and completed at the beginning of 1994, used cognitive approaches to the testing and revision of the survey questionnaire and introduced computerized data collection. Computer-assisted telephone and computer-assisted personal interviewing were introduced. They will give us the opportunity to do a number of new things and to access data for research purposes, and the interviewers will also be able to use dependent interviewing for the

first time for some parts of the questionnaire to improve the quality of data. In the past, CPS interviewers did not have access to the information collected from the same respondent in the preceding month. The survey was begun anew each month. For some categories, however, especially occupational information, which is extremely difficult to collect and code, the interviewer now can verify the preceding month's data and find out whether it has changed.

**Fienberg:** There's actually going to be a longitudinal component in the new version, isn't that true?

**Norwood:** Yes, in several ways. As you know, the CPS used to be done each month as though it were a completely new survey. In the redesign, however, previous responses will be used to help to improve the data. This is especially useful in the questions on occupation, for example, where it had been difficult to retain consistency in the coding of responses from one month to the next. An effort was also made to improve the gross flows data (giving month-to-month transitions in labor force status). In addition, the original plans included a separate longitudinal survey using the CPS questionnaire and CPS data collectors and systems. The plan was to collect the data from the same households (once they left the CPS sample) for a period of several years so as to get better information about changes in labor market behavior. I believe that is important because we need a complete labor market information system. The CPS is very useful; it provides almost a management information system on the economy. It has thousands of data series that can be used to find out what's happening, but it's not enough by itself. We do have the business survey, a payroll survey with several hundred thousand business establishment respondents, and we have the National Longitudinal Survey, which follows age cohorts, so that one can follow certain groups of people over time. But the dimension that is needed now, I believe, is the CPS itself in a longitudinal framework. The longitudinal survey will permit us to look at some of the change that occurs as people go through labor market transitions.

**Fienberg:** If it was so difficult to do research in the early 1980's, how could BLS embark on such a radical and massive change?

**Norwood:** With great difficulty, a great deal of persistence and a lot of argument. We had special problems in convincing people that we needed funds to provide for an overlap sample. It was important that we have access to information for the same time period collected under the old method and the new. Only in that way would we be able to determine the effect of the redesign changes on the data themselves. In the early part of 1994, for example, when the new survey was introduced, the unemployment rate rose.



FIG. 7. Being presented the Department of Labor's Philip Arnow Award in 1979 by Robert Brown, Under Secretary of Labor.



FIG. 8. Bernard Norwood, Janet Norwood, and Secretary of Labor Ray Marshall, as Janet is being sworn in for her first appointment as Commissioner of BLS in 1979.



FIG. 9. Getting ready to testify at the Joint Economic Committee in 1979. [Bob Stern (BLS), Janet Norwood, Senator Bentsen, Kenneth Dalton (BLS)].

The country needed to know whether the increase was a change from the preceding month or whether it was the result of the change in survey methodology.

Agencies like the BLS which produce time series data always need to be able to explain the effect of any improvements. This is especially true for surveys of the tremendous national importance of the labor force survey. But it was quite a fight. Nobody likes the idea of an overlap sample because it is very expensive; people will tell you that you can dribble a few households into the survey every month and you'd never know the difference. But we must know what the differences are when we make changes in a major national survey.

One of the biggest reasons that we were able to make real progress is that there was a lot of unemployment, and people were willing, therefore, to focus on improved measurement. You know, one of the problems with the federal statistical system is that people are only interested in surveys when there are serious problems.

#### COGNITIVE RESEARCH AT BLS

**Fienberg:** What were some of the major research activities themselves? I believe that some of those that I always thought were critical were done in the BLS cognitive laboratory.

**Norwood:** Well, I agree with you about that. You know it's very difficult in government to do things that are new, especially if you need additional personnel. But as the result of the importance of cognitive research in issues of questionnaire design—the interest in which was spawned by the Cognitive Aspects of Survey Methodology (CASM) movement, which I know you were much involved with—I established a small laboratory at BLS. That laboratory has done fine things for the Bureau, not just for the Current Population Survey, but for many of the surveys that BLS does. As a rule, new questionnaires are tested in the laboratory before they go to the field. That reminds me of the time in a budget hearing when a congressman asked why BLS had hired a psychologist. I had to explain that we were not providing therapy to our staff, but rather that we needed the psychologist to work with the statisticians to improve our surveys.

Of course, the Census Bureau and the National Center for Health Statistics also do laboratory testing. BLS has now worked to extend the laboratory research to surveys on business as well as to surveys on households. You can't bring business people into laboratories, however. So we put the laboratory on the road. Several of our people went out to business establishments to conduct the same sort of cognitive testing in the business establishment itself.

In the case of the CPS, BLS and Census began a cooperative effort at cognitive review of the CPS questionnaire. The staff began by bringing groups of unemployed workers to the laboratory, having them respond to the CPS questionnaire and then, through focus-group discussion, determine from the respondents what they thought the questions meant. Although previous research had pointed to a number of problem areas, the use of laboratory experimentation and analysis of different wording, for example, made it possible to improve the question more easily. For example, the staff was able to determine from respondents the best way to ask about hours of work or about income earned so that the desired information could be more easily retrieved from the respondent's memory. [For a good summary of this work see the following: Plewes, T. J. (1994), Federal agencies introduce redesigned Current Population Survey, *Chance* 7 (No. 1) 35–41; a set of articles in a special issue of the Bureau of Labor Statistics' *Monthly Labor Review* 111 (September 1993); and an article by Janet Norwood and Judith Tanur in *Public Opinion Quarterly*, 58 (1994) 277–294.]

In addition, the full computerization of the questionnaire was developed and initially tested in the laboratory. Although field testing was still required, the preliminary laboratory work with respondents permitted better targeting and more efficient testing in the field. That is important, because field testing can be extremely expensive.

In many ways, my interest in the application of cognitive techniques in survey research is related to my interest in interdisciplinary research in general. It seems to me that we can vastly improve our surveys when we bring together the expertise of many different fields, for example, psychology, linguistics, economics and statistics.

I believe that cognitive laboratories are tremendously important; they increase the efficiency as well as the quality of the work of statistical agencies. One can determine how people store and retrieve information, as well as what data collection probes can help respondents in answering questions and how they should be used. We can use this research to adjust questionnaire wording to get better quality of survey response. Moreover, a great deal can be learned from small groups of people in the laboratories to get an understanding of what the problems are before expensive field tests. Field tests can then be focused on the things that are really important. When we inaugurated the new laboratory at BLS, we brought together the director of the National Center for Health Statistics and the director of the Census Bureau to sign with the commissioner of labor statistics an agreement of cooperation. We set up a committee at the technical level to be certain that

the work that was done in each laboratory would be shared among the agencies. We have also done a lot of cognitive work cooperatively with Census on the Consumer Expenditure Survey questionnaire, which is such an expensive and long survey. We found that older people have problems that younger people don't have in understanding questions, and that we have to be concerned with language problems as well. I would like to see this movement of cognitive research on survey design, now that it has taken hold in the U.S. statistical system, extended internationally. We were successful in establishing international definitions of unemployment, but the same definitions, when translated into different languages, can produce different survey results. The problem is that many aspects of a questionnaire—the way the question is asked, the words that are used, the time during the interview that a question is asked—all can affect the response. It is difficult enough to handle these issues in one language; the problems of comparability multiply when surveys are conducted in different countries where words and concepts may have different meanings.

**Fienberg:** Don't many international efforts push for standardization of wording rather than meaning?

**Norwood:** Yes. I was very much involved in the development of the international standards for unemployment measurement in the International Labor Organization. In fact, I chaired the Conference of Labor Statisticians which determined the concept that should be applied. The problem is that you have different economies and customs in different countries. For example, the developing countries have large numbers of self-employed workers, and if you ask the questions in the same way that we ask them in the U.S. with a smaller number of self-employed people, you get very different responses.



FIG. 10. Janet Norwood with Aryness Wickens in 1979.

We had to take account of some of those differences. What we tried to do was to set up a system of building blocks, so that you could get the information and use it to adjust the data for comparability.

You know, when you think about it, we have a statistical system which began with measures of social and economic phenomena that were appropriate to the time when they were developed. But nothing changes more rapidly than social and economic phenomena. We even see changes in the way in which people approach and define them, and a statistical system which cannot keep up with that change is very soon going to be out of date. It is tremendously important for the underlying concepts used in surveys to reflect reality. The only way that can be done is to continue to support the kind of research that needs to be done.

**Fienberg:** During the 1980's when you were working as Commissioner, you were also quite active in the American Statistical Association and the American Economics Association, as I recall. In ASA, you were, among other things, vice president and then later president. What aspects of those activities, as you look back on them, do you think of as being important to the profession?

**Norwood:** I was a member of the Executive Committee of the American Economic Association, which gave me an opportunity to try again to bring these two disciplines closer together. I find that many economists are not as interested as they ought to be in the data that are used to specify their models, and the statisticians frequently are not concerned enough with how the data whose collection they help design are going to be used.

I felt that the American Statistical Association was tremendously important to the Bureau of Labor Statistics. I became active in the Association because I believe that a good professional, and certainly the head of any government statistical agency, has got to keep up with what is going on in the field of statistics. In addition, I wanted to be certain that I made contact with people in academic institutions who were training some of the good people who were going to be in the forefront of statistical work in the United States in the future. I tried to interest them more in empirical issues and to encourage their students to work on the application of theory to practical problems. I found my years of activity in the AEA and in the ASA to be very rewarding to me, too, because I learned a great deal from many of my colleagues in the profession and at conferences as well.

The ASA, at the time that I was on the board, was going through considerable change. There was a new Executive Director. You will recall that, since you chaired the search for the new Executive Director. The most important problem that we faced at the

time was that the financial base of the association needed to be improved. That was important because of my belief that the association must be active to promote the profession. Without a sound financial base, that could not be done. So, during the year of my presidency, we tried to try to look at how we could effectively arrange the finances and make the organization more efficient so that ASA could move ahead.

The ASA has been struggling for a long time to decide whether it wants to be a professional association or whether it wants to be a scholarly society.

**Fienberg:** This is not a new conflict; doesn't it go back years and years?

**Norwood:** It goes back to the beginning of the association, I think, and that conflict continues. I'm not sure that it's a bad thing, by the way. One of the things that ASA can do, and do well, is to expand knowledge of statistics. To do that, the Association needs to talk to others besides itself. My year as president was 1989, which was the sesquicentennial year of the Association. It was an active year; we had a number of special events, spaced throughout the year. The ASA annual meeting was somewhat longer than usual, too. We had celebrations to mark the importance of the ASA and, in particular, to make clear to the general public how far the statistics profession had come from the days in 1839 when Lemuel Shattuck and a few others got together in Boston to look at sets of numbers. We had come from merely producing numbers to understanding how to use numbers, how to sample to represent a universe, how to put numbers together and how to interpret and analyze the data. So it's a wonderful, very rich history.

## CERTIFICATION

**Fienberg:** An issue which has come up since your presidency and which is one of active discussion at the moment is that of certification of statisticians.

**Norwood:** Yes, I know.

**Fienberg:** Do you have any views on whether certification might be linked to the notion of bringing disciplines together?

**Norwood:** Yes, I do have a view on it. Frankly I'm opposed to certification of statisticians. I believe that it would help some people who are doing consulting work and others to be able to have a certificate saying that they have passed an examination, but it would narrow ASA's focus. It would increase tension in the organization.

Besides, as you know, I believe very strongly that the statistics profession needs to be involved in the central issues facing our society, and the only way that statisticians can bring their skills to bear on these issues is to be broadly based and in-

terested in other disciplines. I think the more you reduce statisticians to only the group who are fully certified—and make no mistake about it, that is what would inevitably happen—you encourage separateness. I think that is not good for the discipline in general. I believe the future of the world is multidisciplinary, and I also believe that one of the big problems in our universities today is that the whole system of rewards is based upon peer group recognition, which discourages people from reaching out to other departments.

You and I both served on the Social Science Research Council's Committee on Cognition and Survey Research. We had a number of different disciplines represented, including anthropology, psychology and linguistics, and we had input from a number of different associations. We saw that much of the research that this committee initiated was focusing on problems that were not really understood or known to statisticians involved in theory and statistical design. And we decided, if you will recall, that one of our special goals was to try to get some of this research published in journals where the statistical profession would see it and understand it. Anthropologists normally don't publish in *JASA*, but as a result of the committee's effort a review of the Health Interview Survey by two anthropologists was published in the March 1990 issue of *JASA*.

So I think that certification needs to be handled with very great care. I should say that I know that the Royal Statistical Society (RSS), of which I am an Honorary Fellow, is involved in certification because of its merger with the Institute of Statisticians, so it may be a trend.

**Fienberg:** But the RSS is really adapting the certification program that was carried over from the Institute of Statisticians, rather than creating a new one. And I think that if you look back at the history of the institute, its certification process was not so much for statisticians in the U.K., but for those outside who didn't have access to universities. Undergraduate training in statistics is much more widely spread in the U.S.

**Norwood:** That is probably true. If the ASA decides to go ahead with certification of statisticians, it will have to be very careful that it does not develop a system of second-class membership along with it.

## RELATIONSHIPS WITH UNIVERSITIES

**Fienberg:** You were talking about universities. You've never actually been a regular university faculty member; is that correct?

**Norwood:** At the very early stage of my career, I was on the faculty at Wellesley College, but most of my career has been in the government. Bernard



and I were in Washington for a short period and then we went abroad. And when we were abroad, when Bernard was in the Foreign Service, wives were not able to work. So I did some writing and research, actually in the international trade field, which was published in the 1960's.

**Fienberg:** Even though you haven't been in universities for a long time, you get to visit them. In particular, I know that you have been a member of several visiting committees for different departments. As you've gone through those activities, what's your sense about the role of statistics departments, given the views you've just talked about, about interdisciplinary education and a interdisciplinary future?

**Norwood:** In most universities, the statistics department is not sufficiently involved in the work of the whole university. Many statisticians who are teaching really feel that their job is to teach their students to be like themselves, and in many cases these are people who are very interested in theory and not in application. It is very difficult for anyone in an academic institution to reach out to other disciplines and to develop joint courses because it takes a great deal of time and effort, and one frequently doesn't get sufficient credit for it. I've been on advisory committees and visiting committees at Harvard, at MIT, at the Wharton School, at Carnegie Mellon and at the Public Policy School at the University of California at Berkeley, and I have seen that situation.

There is beginning to be some recognition of the need for development of interdisciplinary education, but I think statisticians need to do much more to bring it about. That's why I have been involved with the National Institute of Statistical Sciences (NISS). I served for several years as chairman of its Board of Trustees because I think that NISS is a major effort by statisticians to reach out to develop projects with people from other disciplines, and I think that, after some period of time, it will become much more usual for people in the statistics profession to have a broader outlook and, more importantly, to be helping those in other professions and to learn from them.

## VIEWS ON THE FEDERAL STATISTICAL SYSTEM

**Fienberg:** In your work at BLS and in the government more broadly, what do you see as the future of government statistics in the United States and, in particular, the future of the federal statistical system?

**Norwood:** I'm very worried about the current state of the federal statistical system. It needs help and it needs help quickly. And that's why I have devoted a good bit of my time over the last year and a

half to working with people in Congress, in the Administration and in statistical agencies to improve, in particular, the basic infrastructure of the system. We are losing our competitiveness internationally. We are increasingly fragmented, and we have inadequate coordination. We have agencies where data are carefully protected from litigation, and we have other agencies where they are not. We have heads of agencies who have terms of office and cannot be removed except for malfeasance in office, like the Commissioner of Labor Statistics and the Commissioner of Educational Statistics, and then we have other agency heads like the Director of the Census Bureau, who serves at the pleasure of the President. We have agencies like BLS, which report directly to the Secretary of Labor and is an agency in its own right, which defends its own budget before the Congress and has personnel and dollars allocated directly to it. We also have a Census Bureau, which is certainly an agency in its own right, but, nevertheless, reports through an undersecretary to the Deputy Secretary to the Secretary of Commerce. I think that is much too far down in the hierarchy for an important statistical agency. We have an agency like the National Center for Educational Statistics, which has a commissioner who is appointed by the President with a fixed term of office and yet reports to an assistant secretary and does not have a specific salaries and expenses budget. We have a National Center for Health Statistics, which is a part of the Centers for Disease Control and is way down in the basic hierarchy. I just don't think that makes a lot of sense, and I think that it could easily be corrected.

We also have serious problems with the way in which we handle confidentiality within the system. All of the agencies have concerns about confidentiality protection and do their utmost to protect confidentiality and do so. But, because each agency has a different law or different procedures, there is very little change of microdata within the system. That means that there is duplication of effort. It is time, it seems to me, to change all this. The way in which I would do it is to adopt either of two approaches. The first approach is more radical than the other and might be very much more difficult to bring about. That would involve putting together into a statistical board the Bureau of the Census, the Bureau of Labor Statistics, the Bureau of Economic Analysis, which is kind of umbrella organization using data from all over the system, and the statistical policy division of OMB. I would have the head of these agencies within the board chaired by a Chief Statistician. I'd also have the head of each of these agencies be a presidential appointment with a fixed term of office. One other important element is that I would divide the Census Bureau into the ongoing work of

the bureau, with a separate director for the development of the decennial census, whose responsibility would be to carry out the census and who would oversee the research during the decade on how the next census should be done. I think by merging the research for the next decennial census into the ongoing work of the Census Bureau that the research does not get sufficient attention. It's interesting to note that if you just took the Bureau of Labor Statistics and the Census Bureau, that you have an agency that would have nearly 10,000 people and would have about three quarters of a billion dollars in budget—just those two agencies alone. If you separate out the costs of the decennial census, the Bureau of Labor Statistics has the largest budget. The Census Bureau is next. That's one option. I think that would be very difficult to bring about because there are a lot of stakeholders who would strongly oppose it. I have discussed it with several people in the Administration, and, as one would expect, they are not very thrilled about the idea. No one wants to lose what they consider to be an important part of their department.

**Fienberg:** So what do you suggest?

**Norwood:** I think that we could use a second option which could more easily be done. We need to pass a National Statistical Law. Congress should pass a law which would provide for a single confidentiality law applying across the whole system and which would permit the exchange of microdata within the system. This would go further toward improving the quality of data in the statistical system than anything else that we could do. I think it would permit research on exchanged microdata among and between agencies. It would go a long way toward helping to improve the data system that we have. For example, we could have a single establishment list or if there were more than one, the lists could be carefully researched and compared, one against the other. We could remove duplication of efforts, although some duplication should exist because you want to collect data to be able to link it directly to other kinds of things that are collected in a particular survey. But I do think there is a great deal which could be eliminated eventually if we were to have the exchange of microdata.

In addition, I think a "national statistical law" should raise the level in the department for several of the statistical agencies, standardize appointments, require that each agency have its own budget and personnel and be permitted to go directly to Congress for appropriations. And, most important of all, the statistical policy division at OMB must be strengthened. The national statistical law should make the chief of the Statistical Policy Division a presidential appointee with a fixed term of office and with ac-

cess directly to the deputy director and the director of OMB. I would also provide for a federally funded research center to do some of the research and analysis that the Statistical Policy Division needs. You will recall, of course, that the Statistical Policy Division used to have about 65 people and it is now down to something like 5. At one point there were more people at work in the General Accounting Office trying to evaluate the system than there were in OMB trying to coordinate the system. To me that just doesn't make much sense. I think we need to have one-stop shopping for national data, and that's got to be handled by the Office of Management and Budget. However, I'm very much opposed to a computer system arrangement which merely takes data from all over and puts it together without research on linkages. In the future, the statistical system must make much better use than in the past of administrative data linked to survey data. I think that needs the best minds of the profession. I'd like to have that done in a federally funded research statistics center set up under the direction of the Statistical Policy Division for the use of the entire system.

**Fienberg:** So the outlook in either of these scenarios for statistical research and for collaboration with those in other disciplines is a rosy one?

**Norwood:** I think it should be, and I think it could be. It seems to me that everywhere I go people ask me whether the budget reduction of the 1980's hurt the federal statistical system, and the answer is, of course it has. We haven't been able to do as many things as we would have liked to do. And, in many ways, the world, which keeps changing, moves beyond us. But the data sets that we have, I think, have not deteriorated markedly in quality. We should make them better and find a way to keep them modernized on a regular basis.

Certainly, we don't have some of the things that we would have liked to have had. The problem that we face is that the world is changing so fast and the need for data, particularly for policy purposes, is so great that we have to reexamine statistical series constantly to ensure their relevance to current issues. They have to be of high quality, they have to be timely, they have to use state-of-the-art techniques. Statistics cannot stand still, and statistical agencies cannot stand still. We've been borrowing on the future because we have not undertaken the kind of research that needs to be done. We can't have a statistical system merely pumping out data. It's time for us to recognize that we need change and to get our infrastructure in order, to get high-quality appointments to agencies like the Census Bureau. We need people in the system of very high quality, who will be fearless in the pursuit of excellence in the federal statistical system. I'm constantly reminded of the



FIG. 11. With Senator William Proxmire and Thomas Plewes (BLS Associate Commissioner) at Norwood's retirement in 1991.

very first labor commissioner, Carroll Wright, who set out in 1884 to establish a system of professionalism for data collectors and for those processing data. He talked about the "judicious investigation of fact and the fearless publication of the results thereof." It seems to me that that's what we need more of at this time.

#### SOME CURRENT ACTIVITIES

**Fienberg:** We have spent most of our time talking about the major programs at BLS and about leader-

ship in the federal statistical system. Do you miss being Commissioner of Labor Statistics?

**Norwood:** No. I am delighted to have had the opportunity to move on to learn new things and to expand my knowledge of other fields of activity. Of course, I miss the wonderful people on the BLS staff with whom I had the good fortune to work for many years. But the private sector provides a better opportunity for me now to accomplish many of the things I have always wanted to do. For example, I have found my responsibilities as a bank director and the chairman of the Bank Board's Committee on Risk Assessment make it possible to expand my ideas on the interaction of statistical models and probability analysis to the business world. My work in chairing the Advisory Council on Unemployment Compensation is both challenging and, I believe, very important. I am on the Board of Trustees of the National Academy of Public Administration, which is working on projects to improve the quality of governance in this country. I am serving this year as vice president of the Cosmos Club (in Washington, D.C.), and, at the Urban Institute, I have had the opportunity to interact with first-rate professionals and to keep up my interest in labor market issues.

I have long believed that every stage of life should be better than the one before it, and I have found the last two years since I left public service to be challenging, productive and very satisfying ones.

**Fienberg:** Thanks for taking the time to share some of your recollections with us.



JANET L. NORWOOD

JANET L. NORWOOD











PARAGUAY

ADOS UNIDOS

PANAMA

ARGENTINA

URUGUAY











